

IVANOV, R.

"Application of Soviet Experience in Sta Standardization of Mineral Oils",
P. 168, (CIAVARYOCITVAM, Vol. 5, No. 10/11, Oct./Nov. 1965, Budapest,
Hungary)

cc: Monthly List of East European Assessments (EWAL), LC, Vol. 4, No. 3,
March 1955, Uncl.

IVANOV, R.

What is a decibel and what does measuring the level in decibels mean? p. 37 RADIO. (Ministerstvo na poshtite, telegrafite, telefonite i radioto i Tsentralniia svet na dobrovolnata organizatsiia za subeistvie na otbranata) Sofiya. Vol. 5, No. 4, 1956

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 5, No. 11, November 1956

IVANOV, R. (g.Krasnodar)

A cybernetic "cat." Radio no.1:30-32 Ja '62. (MIRA 15:1)
(Electronic apparatus and appliances)

BUKHANOVSKIY, I.; IVANOV, R., inzh.

Improvement of ship radar systems [from foreign practices].
Mor. flot 22 no.2:43-44 F '62. (MIRA 15:4)

1. Nachal'nik otdela avtomatizatsii sudovozhdeniya TSentral'nogo nauchno-issledovatel'skogo instituta ekonomiki i ekspluatatsii vodnogo transporta (for Bukhanovskiy). 2. Otdel avtomatizatsii sudovozhdeniya TSentral'nogo nauchno-issledovatel'skogo instituta ekonomiki i ekspluatatsii vodnogo transporta (for Ivanov).
(Great Britain--Radar in navigation)

IVANOV, R., inzh.

Use of electronic digital computers in directing the movement
of ships in river sections equipped with locks. Rech. transp.
(MIRA 19:1)
24 no.11:17-18 '65.

1. TSentral'nyy nauchno-issledovatel'skiy institut ekonomiki i
ekspluatatsii vodnogo transporta.

DIMITROV, D.; IVANOV, R.

Diagnostic difficulties in Schoenlein-Henoch disease and its surgery.
Khirurgiia, Sofia 8 no.7:671-672 1955.
(PURPURA, NONTHROMBOOPENIC,
diag. & surg.)

IVANOV, R.; SIVCHEV, S.

Giant cell tumor of cervical vertebrae. Khirurgiia, Sofia 10 no.10:
938-941 1957.

1. Iz klinikata po ortopediia i travmatologii i Patologoanatomichniia
institut pri VMI - Sofiia.

(SPINE, neoplasms

giant cell tumor of cervical vertebrae)

(GIANT CELL TUMORS, case reports

cervical vertebrae)

IVANOV, R.; RAICHEV, R.

Parosteal sarcoma with description of a case with unusual localization.
Khirurgiia, Sofin no.3:259-262 Mar 58.

1. Institut za spetsializatsiia i usuvurshenstvuvane na lekarite--
Sofiia klinika po ortopediia i travmatologii. Direktor: prof. B. Boichev
Nauchnoizledovatelski onkologichen institut Direktor: prof. V. Mikhailov.

(FOOT, neoplasms

parosteal sarcoma (Bul))

(FIBROSARCOMA, case reports

parosteal, of foot (Bul))

KONFORTI, B.; IVANOV, R.

A new surgical procedure for direct subtrochanteric osteotomy of the femur. Khirurgia, Sofia 11 no.7:585-595 1958.

1. Institut za Spetsializatsiia i usuvurshenstvuvane na lekarite-Sofia Klinika po ortopediia i travmatologii. Direktor: Prof. B. Boichav.

(FEMUR, fract.

surg., new technic for direct subtrochanteric osteotomy
(Bul))

KONFORTI, B.; IVANOV, R.

Adduction osteotomy of the hip with special reference to the
technic. Khirurgiia, Sofia 12 no.7:587-596 '59.

1. Institut za spetsializatsiia i usuvrshenstvuvane na leka-
rite - Sofia, klinika po ortopedia i travmatologija. Direktor:
prof. B. Boichev.
(HIP surg.)

IVANOV,R.

A new surgical technic in osteosynthesis of fractures of the femoral neck. Khirurgiia, Sofia 13 no.2-3:303-305 '60.

1. Iz Katedrata po ortopediia i travmatologii - ISU. (FEMUR NECK fract.& disloc.)

BOICHEV, B., prof.; IVANOV, R.

On stable osteosynthesis in fractures of the femoral neck. Khirurgiia,
Sofia 13 no.11:947-957 '60.

1. Institut za spetsializatsiia i usuvurshenstvuvane na lekarite,
Sofia Katedra po ortopediia i travmatologija. Zav. katedrata:
prof. B.Boichev.
(FEMUR NECK fract & disloc)

BOYSHEV, B.; IVANOV, R.

Stable osteosynthesis in fractures of the femoral neck. Ortop.
travm.i protez. 21 no.289-13 F '60. (MIRA 13812)
(FEMUR-FRACTURE)

IVANOV, R.

On the geology of the Dambaluk volcanic mountain range, Momchilgrad
District. Izv Geol inst BAN no.9:143-151 '61.

BOICHEV, B., prof.; IVANOV, R.

Diagnostic difficulties and therapeutic possibilities in giant cell tumors. Khirurgiia, Sofia 14 no.1:25-37 '61.

1. Institut za spetsializatsiia i usuvurshenstvuvane na lekarite, Sofia. Katedra po ortopediia i travmatologiiia. Zav. katedrata: prof. B. Boichev.

(GIANT CELL TUMORS)

IVANOV, R.

Roentgenological indications for intertrochanteric osteotomy of the femur in residual subluxations and epiphysitis of the hip joint in congenital hip dislocation. Khirurgiia (Sofia) 14 no.11:1025-1036 '61.

1. Institut za spetsializatsiia i usuvurshenstvuvane na lekarite, Sofia, katedra po ortopediia i travmatologiiia. Zav. katedrata: prof. B. Boichev.

(HIP joint & disloc)

IVANOV, R.

Flexion-abduction method in the osteosynthesis of fractures of
the femoral neck. Ortop., travm.i protez. no.7:18-22 '61.
(MIRA 14:8)

1. Iz kliniki ortopedii i travmatologii (dir. - prof. B. Boychev)
Instituta dlya spetsializatsii i usovershenstvovaniya vrachey,
Bulgariya.

(FEMUR-FRACTURE)

IVANOV, R., inzh.

Radar station for river craft. Rech. transp. 22 no.11:61-62 N
'63. (MIRA 16:12)

IVANOV, R.

A petrochemical method and modal systematics of some magmatic rocks. Izv Geol Inst BAN 11:89-124 '62.

IVANOV, R.

Lithologic and stratigraphic correlation of the metamorphic series of Kurdzhali and Asenovgrad regions. Spis Bulg geol druzh 25 no.2:151-158 '64.

1. Geologic Institute of the Bulgarian Academy of Sciences.

L 24642-66

ACC NR: APC012314 (A,N)

SOURCE CODE: UR/0310/65/000/011/0017/0018

AUTHOR: Ivanov, R. (Engineer)

ORG: TsNIIEvt

TITLE: Use of digital computers for controlling the motion of ships in the lock section of canals

SOURCE: Rechnoy transport, no. 11, 1965, 17-18

TOPIC TAGS: ship navigation, navigation computer, water traffic

ABSTRACT: The author proposes a method for using digital computers to pilot ships through the lock systems of canals. It is assumed that the losses involved in passing each ship through the lock section are a function of the time required for passage of the ships through the section, efficiency in use of the overflow system and utilization factor for the lock chamber. Operational data are used for derivation of a general quadratic equation which expresses the traffic intensity in terms of the month. The empirical constants for this formula are given for the years of 1961-64. The traffic data for these years are analyzed on a punched card computer and used as a basis for developing methods to speed up traffic. Orig. art. has: 1 figure, 2 tables, 2 formulas.

SUB CODE: 17/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

UDC: 656.628 : 681.142.002

Card 1/1 *pla*

IVANOV, R., aspirant; YENSHINA, G.

Regulation of the movement of vessels on the lock-equipped waterways
of France. Rech. transp. 24 no.8:52-53 '65. (MIRA 18:9)

1. TSentral'nyy nauchno-issledovatel'skiy institut ekonomiki i
eksploatatsii vodnogo transporta.

IVANOV, R.

Transformation of the Zavaritskiy number into the standard
cata norm. Izv Geol inst BAN 10;73-87 '62.

SMYKOV, V.I., inzh.; IVANOV, R.A., inzh.

Stabilizing gravelly soils with cement. Avt. dor. 24 no. 3:23 Mr
'61. (MIRA 14:5)
(Soil stabilization)

LIKHTEROV, B.M., kand.tekhn.nauk; IVANOV, R.A., inzh.; SHEVELEV, L.M., inzh.

Effect of sea water temperature on the efficiency of a marine
steam turbine plant with a system of free-flow circulation.
Sudostroenie 29 no.6:15-18 Je '63. (MIRA 16:7)
(Steam turbines, Marine) (Ocean temperature)

IUTNOV, R. B.

21 (7), 21 (8) Rudakov, V. P. 107/89-7-1-10/26

Abstract:

IX All-Union Conference on Nuclear Spectroscopy (IX. Vsesoyuznoye sъezdostvye po nukleinoy spektroskopii)

Abstracts section: 1957, Vol. 7, pp. 76-79 (TMN)

Periodicals:

The IX All-Union Conference was held from January 26 to February 2, 1957 at Tashkent. More than 100 participants heard 100 lectures, the most important of which dealt with the following fields: Nuclear Theory, General problems of theory, A. S. Barzakov (TMN): Theoretical, General, Statistical, of isomers, excited nuclear states, L. V. Pelet, D. A. Sil'ev (TMN): Statistical, L. V. Pelet, D. A. Sil'ev (TMN): Statistical, oscillations of deformed nuclei, G. V. Tsybin, V. T. Sazanov, S. P. Tarasov (TMN): Calculation of the fluctuations with matrix elements of the transitions by means of the commutant method, G. V. Tsybin, V. T. Sazanov (TMN): Computation of the correlation model, G. V. Tsybin (TMN): Computation of the correlation model, G. V. Tsybin (TMN): The application of the superconductivity model to nuclei for the purpose of calculating their moments of inertia, G. V. Tsybin (TMN): Prediction of the deexcitation probability of excited nuclei (TMN): The present stage in the theory of decay, Ya. S. Sitenko (TMN):

Measurement of the nuclear correlation between electron and neutrino in the decay of the neutrino, T. V. Vitchubayev, Z. A. Katsenelenbaum, I. V. Chubanov (TMN): Measurement of the correlation between the transversal electron polarization and correlation polarization of neutrons occurring in the decay of protons and nuclei, D. A. Sazanov (TMN): Production of nuclei, T. V. Vitchubayev, Z. A. Katsenelenbaum, I. V. Chubanov, A. F. Tikhonov, Yu. V. Slobodchikov, Yu. V. Slobodchikov, A. M. Ulyanov, P. M. Shchegolev, G. P. Slobodchikov, A. S. Tikhonov, I. V. Chubanov, I. V. Chubanov (VNIKKE-Tekhnicheskii Tekhnicheskii Institut (Physico-Technical Institute, Tashkent), Tashkent, 1956, No. 20 (part 1), 32-34; No. 21, 1957, No. 10 (part 1), 47-50; No. 11, 1957, 101-104; No. 12, 1957, 115-116; No. 13, 1957, 125-126; No. 14, 1957, 135-136; No. 15, 1957, 145-146; No. 16, 1957, 155-156; No. 17, 1957, 165-166; No. 18, 1957, 175-176; No. 19, 1957, 185-186; No. 20, 1957, 195-196; No. 21, 1957, 205-206; No. 22, 1957, 215-216; No. 23, 1957, 225-226; No. 24, 1957, 235-236; No. 25, 1957, 245-246; No. 26, 1957, 255-256; No. 27, 1957, 265-266; No. 28, 1957, 275-276; No. 29, 1957, 285-286; No. 30, 1957, 295-296; No. 31, 1957, 305-306; No. 32, 1957, 315-316; No. 33, 1957, 325-326; No. 34, 1957, 335-336; No. 35, 1957, 345-346; No. 36, 1957, 355-356; No. 37, 1957, 365-366; No. 38, 1957, 375-376; No. 39, 1957, 385-386; No. 40, 1957, 395-396; No. 41, 1957, 405-406; No. 42, 1957, 415-416; No. 43, 1957, 425-426; No. 44, 1957, 435-436; No. 45, 1957, 445-446; No. 46, 1957, 455-456; 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No. 326, 1957, 3255-3256; No. 327, 1957, 3265-3266; No. 328, 1957, 3275-3276; No. 329, 1957, 3285-3286; No. 330, 1957, 3295-3296; No. 331, 1957, 3305-3306; No. 332, 1957, 3315-3316; No. 333, 1957, 3325-3326; No. 334, 1957, 3335-3336; No. 335, 1957, 3345-3346; No. 336, 1957, 3355-3356; No. 337, 1957, 3365-3366; No. 338, 1957, 3375-3376; No. 339, 1957, 3385-3386; No. 340, 1957, 3395-3396; No. 341, 1957, 3405-3406; No. 342, 1957, 3415-3416; No. 343, 1957, 3425-3426; No. 344, 1957, 3435-3436; No. 345, 1957, 3445-3446; No. 346, 1957, 3455-3456; No. 347, 1957, 3465-3466; No. 348, 1957, 3475-3476; No. 349, 1957, 3485-3486; No. 350, 1957, 3495-3496; No. 351, 1957, 3505-3506; No. 352, 1957, 3515-3516; No. 353, 1957, 3525-3526; No. 354, 1957, 3535-3536; No. 355, 1957, 3545-3546; No. 356, 1957, 3555-3556; No. 357, 1957, 3565-3566; No. 358, 1957, 3575-3576; No. 359, 1957, 3585-3586; No. 360, 1957, 3595-3596; No. 361, 1957, 3605-3606; No. 362, 1957, 3615-3616; No. 363, 1957, 3625-3626; No. 364, 1957, 3635-3636; 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No. 404, 1957, 4035-4036; No. 405, 1957, 4045-4046; No. 406, 1957, 4055-4056; No. 407, 1957, 4065-4066; No. 408, 1957, 4075-4076; No. 409, 1957, 4085-4086; No. 410, 1957, 4095-4096; No. 411, 1957, 4105-4106; No. 412, 1957, 4115-4116; No. 413, 1957, 4125-4126; No. 414, 1957, 4135-4136; No. 415, 1957, 4145-4146; No. 416, 1957, 4155-4156; No. 417, 1957, 4165-4166; No. 418, 1957, 4175-4176; No. 419, 1957, 4185-4186; No. 420, 1957, 4195-4196; No. 421, 1957, 4205-4206; No. 422, 1957, 4215-4216; No. 423, 1957, 4225-4226; No. 424, 1957, 4235-4236; No. 425, 1957, 4245-4246; No. 426, 1957, 4255-4256; No. 427, 1957, 4265-4266; No. 428, 1957, 4275-4276; No. 429, 1957, 4285-4286; No. 430, 1957, 4295-4296; No. 431, 1957, 4305-4306; No. 432, 1957, 4315-4316; No. 433, 1957, 4325-4326; No. 434, 1957, 4335-4336; No. 435, 1957, 4345-4346; No. 436, 1957, 4355-4356; No. 437, 1957, 4365-4366; No. 438, 1957, 4375-4376; No. 439, 1957, 4385-4386; No. 440, 1957, 4395-4396; No. 441, 1957, 4405-4406; No. 442, 1957, 4415-4416; No. 443, 1957, 4425-4426; No. 444, 1957, 4435-4436; No. 445, 1957, 4445-4446; No. 446, 1957, 4455-4456; No. 447, 1957, 4465-4466; No. 448, 1957, 4475-4476; No. 449, 1957, 4485-4486; No. 450, 1957, 4495-4496; No. 451, 1957, 4505-4506; No. 452, 1957, 4515-4516; No. 453, 1

7(4), 7(5), 24(7)

AUTHORS:

Dzhelepov, B. S., Ivanov, R. B.,
Nedovesov, V. G., Shishin, B. P.

SOV/48-23-7-2/31

TITLE:

The α -Spectrum of U^{233} (α -spektr U^{233})

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 7, pp 788-791 (USSR)

ABSTRACT:

The introduction mentions a paper by F. Asaro who detected three α -groups of U^{233} by means of a magnetic α -spectrometer of the sector type. In the following L. L. Gol'din et al. showed in an exact investigation of the α -spectrum of U^{233} that it is composed of five lines. These lines are indicated, and it is ascertained that the last three of these lines cannot be calculated by the known formulas for the intensity of the α -transitions. In 1958, the authors carried out investigations of the α -spectrum of U^{233} by means of the α -spectrometer described in the first paper of this issue; these investigations permitted a more accurate determination of the intensity of these three weak lines. Electrochemically plated U^{233} on platinum was used as a source. The measured

Card 1/2

The α -Spectrum of U^{233}

SOV/48-23-7-2/31

values are compiled in two diagrams (Figs 1 and 2); tables 1 and 2 compare the values with those obtained by other authors. The results show that if there is an α_4 -line this is very weak. The α_5 -line is formed by a transition to the 316 kev level, and its intensity shows that this is a transition of a single-particle excited level. The quantum numbers of these transitions are dealt with in detail, and finally a scheme of the decay of U^{233} and of the levels Th^{229} is given (Fig 3). The authors thank Yu. T. Puzynovich and V. N. Delayev for their help in the measurements, and L. K. Pešker for the discussion of the results of their work. There are 3 figures, 2 tables, and 9 references, 6 of which are Soviet.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopin Akademii nauk SSSR (Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 2/2

DZHELEPOV, B.S.; IVANOV, R.B.; NEDOVESOV, V.G.

α -Decay of Pu^{239} . Zhur. eksp. i teor. fiz. 41 no.6:1725-1728 D
'61. (MIRA 15:1)

1. Radiyevyy institut AN SSSR.
(Plutonium--Decay)

10098
S/048/62/026/008/002/028
B102/B108

26.2541

AUTHORS: Ivanov, R. B., Krivokhatskiy, A. S., and Nedovescv, V. G.

TITLE: Measurement of the alpha particle energies of some curium isotopes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 976-978

TEXT: The alpha transition energies of $Cm^{242,243,244}$ were determined by means of photographic emulsion plates. In four series of measurements the plates were exposed to the Cm alpha particles as well as to a Bi^{212} source, whose alpha decay energies are known exactly. The magnetic field strength was kept constant with an accuracy of 0.01%. The following mean alpha-transition energies (kev) were obtained: \checkmark

$$Cm^{242}: E_{\alpha_0} = 6115 \pm 1 \quad E_{\alpha_1} = 6071 \pm 1$$

$$Cm^{244}: E_{\alpha_0} = 5806 \pm 2 \quad E_{\alpha_1} = 5763 \pm 2$$

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9/048/62/026/008/002/028
B102/B108

Measurement of the alpha ...

Cm^{243} : three groups with $E_\alpha = 5991 \pm 3, 5784 \pm 3, 5739 \pm 3$. These values are somewhat higher than those obtained by other authors (Strominger et al. Tables of Isotopes UCRL-1928. April 1958). There are 2 figures and 3 tables.

Card 2/2

S/056/62/043/006/019/067
B102/B104

AUTHORS: Dzhelepov, B. S., Ivanov, R. B., Moskvin, L. N.

TITLE: Alpha decay of Ac²²⁵

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 6(12), 1962, 2077 - 2079

TEXT: An actinium preparation was obtained by irradiating metallic thorium by 660-Mev protons from the OIYAI synchrocyclotron and subsequent chemical separation. The actinium was then evaporated in vacuo and deposited on a glass base. Its α -spectrum was measured with a magnetic α -spectrometer with double focusing. The results are in good agreement with those obtained by Perlman-Rasmussen (Alpha radioactivity) and Hagemann (Phys. Rev. 79, 534, 1950). The lines at 388 and 544 kev, detected for the first time, are attributed to the Fr²²¹ nucleus. There are 2 figures and 1 table.

kev

α_0	0	54
α_1	37	30.7
α_2	98	8.1
α_3	107	2.1
α_4	148	0.95
α_5	104	2.9
α_6	222	0.5
α_7	252	0.6
α_8	274	0.08
α_9	311?	0.02
α_{10}	388	0.06
α_{11}	544	0.05

SUBMITTED: July 20, 1962

Card 1/1

BELOV, L.M.; DZHELEPOV, B.S.; IVANOV, R.B.; KRIVOKHATSKIY, A.S.;
NEDOVESOV, V.G.; CHECHEV, V.P. .

α -Decay of Cm^{245} and Cm^{246} . Radiokhimiia 5 no.3:394-
395 '63. (MIRA 16:10)

(Curium isotopes—Decay)

IVANOV, R.B.; KRIVOKHATSKIY, A.S.; KRIZHANSKIY, L.M.; NEDOVESOV, V.G.;
YAKUNIN, M.I.

Determining ($T_{1/2}$) Pu^{241} half-life period. Atom. energ. 15 no.4:
322-323 O '63. (MIRA 16:10)

DZHELEPOV, B.S.; IVANOV, R.B.; NEDOVESOV, V.G.; CHECHEV, V.P.

α -Decay of curium isotopes. Zhur. eksp. i teor. fiz. 45
(MIRA 17:1)
no. 5:1360-1371 N '63.

BARASH, I. A.; IVANOV, R. B.; KRIVOKHATSKIY, A. S.; NEDOVESOV, V. G.; SILANT'YEV, A. N.

"Gamma Radiations of Cm²⁴² and Cm²⁴³."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

Radiyevyy Institut (Radium Inst)

ACCESSION NR: AP4037560

S/0056/64/046/005/1517/1524

AUTHORS: Dzhelepov, B. S.; Ivanov, R. B.; Nedovesov, V. G.

TITLE: Alpha decay of Pu-241

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1517-1524

TOPIC TAGS: plutonium, Alpha decay, Alpha particle spectroscopy, level transition, decay scheme,

ABSTRACT: The α spectrum of Pu^{241} was investigated with a magnetic α spectrometer with beam focusing at an angle π/Z . The measurement procedure was similar to that used for curium earlier (ZhETF v. 45, 1360, 1963). The data obtained on the relative intensities of the α transitions in each plutonium isotope (table 1), together with resolution of some of the lines, yield 3 level schemes for the α decay of Pu^{241} and Cm^{243} . Several arguments are advanced against one of the

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ACCESSION NR: AP4037560

levels (level a) and in favor of the other (level b). Orig. art.
has: 3 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 22Jun63 DATE ACQ: 09Jun64 ENCL: 02

SUB CODE: NP NR REF SOV: 003 OTHER: 010

Card 2/4

ACCESSION NR: AP4037560

ENCLOSURE: 01

Tabulated experimental results

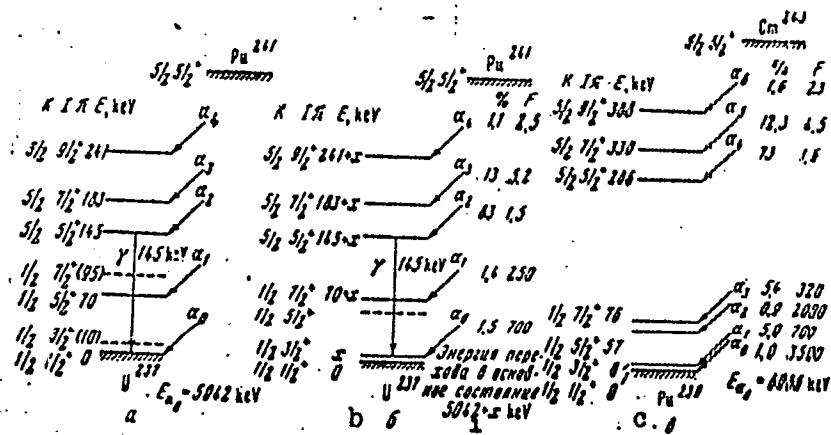
1 № линии	2 Изотоп плутония, к которому припи- саны а-переход	Табличные значения [1,2] 3		Наши данные 5	
		4 E _α , keV	4 относительная интенсивность в данном изото- пе, %	E _α , keV	4 относительная интенсивность в данных изото- пе, %
1	Pu ²⁴¹	•	•	5042±4	1,5±0,5
2	Pu ²⁴⁰	5020	0,1	5020	0,1
3	Pu ²⁴¹	•	•	4973±4	1,4±0,3
4	Pu ²⁴²	4808	76	4904±3	75±2
5	Pu ²⁴⁰	4803	75	4890±4	83±8
6	Pu ²⁴¹	4848	25	4862±4	13±3
7	Pu ²⁴²	4853	24	4850±3	25±2
8	Pu ²⁴¹	•	•	4805±4	1,1±0,3

1 - line number, 2 - isotope to which the alpha transition is assigned, 3 - tabulated values, 4 - relative intensity in the given isotope, per cent, 5 - our data

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ACCESSION NR: AP4037560

ENCLOSURE: 02



Variants of alpha-decay schemes of Pu^{241} (a and b) and of Cm^{243} (c).
1 - Energy of transition to ground state $5042 + x \text{ keV}$

Card 4/4

0925 1685

94,9900

25791
S/046/61/025/005/000/024
R104/P261

AUTHORS: Spivak, G. V., Sirotenko, I. G., and Ivanov, R. D.

TITLE: Domain structure of ferromagnetic films produced by cathode sputtering

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 25, no. 4, 1961, 681-693

TEXT: The present investigation was the subject of a lecture delivered at a symposium on thin ferromagnetic films (Krasnoyarsk, July 4 to 7, 1960). Cathode sputtering was performed in a plasma under an intense discharge and at a low pressure ($2 \cdot 10^{-2}$ - 10^{-3} mm Hg). The free-path length of sputtered atoms was somewhat longer than the distance between target and base layer. The specimen intended for sputtering was connected as the third electrode with a negative potential of 1 kv. A hot cathode served for augmenting discharge current and ion density. The discharge current was of the order of 1 ampere, while that directed onto the specimen to be sputtered was of the order of 1 milliampere. The base layers were made of glass and arranged at a distance of 2 - 3 cm from the

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Domain structure of ferromagnetic ...

25791
S/048/61/025/005/005/024
B104/E201

target. The specimens to be sputtered were disk-shaped and had an area of about 1 cm². The film thickness of permalloy specimens (79% Ni, 17% Fe, 4% Mo) changed linearly with the sputtering time (30-35 minutes), when the specimen potential was 800 v, the discharge current was 0.75 a, the current density to the specimen was 1.6 ma/cm², and the pressure was

$9 \cdot 10^{-3}$ mm Hg. At the same time, the temperature of the specimens ranged from 100 to 125°C. The films formed in a 175-200 oersted magnetic field which was oriented in parallel to the film plane. No annealing processes took place in a magnetic field. Spectroscopic analyses showed that there was no difference between the composition of sputtered films and that of the initial material. The authors were able to observe magnetic powder patterns on 800 Å thick cobalt films. The direction of easiest magnetizing coincided with the magnetic field direction during the process of film sputtering. The sputtering of iron silicide took place under the following conditions. the specimen potential relative to the cathode was 700 v, the current density was 6 ma·cm⁻², the discharge current was 1 a, the pressure was $8 \cdot 10^{-3}$ mm Hg. The sputtering times were 10, 20, and 30 minutes. The wedge-shaped powder patterns observed on iron silicide

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S/048/61/025/005/005/024
B104/P201

Domain structure of ferromagnetic ...

films with 3% Si were oriented in the field direction. In films of the abovementioned permalloy composition, produced under "linear" conditions, the sputtering rate had to be increased sharply (discharge current 1 a, potential of specimen 1.2 kv, current density to specimen 2.6 ma/cm², pressure 8·10⁻⁵ mm Hg) to obtain distinct powder patterns. Differently thick films of this type showed the domains to divide into equal intervals from the thickness of 500 Å onwards. In addition, the domain structure is somewhat increased with larger thicknesses, and the wedges extend in the field direction. On a further increase the wedges are transformed into planes with parallel sides which are oriented in the field direction. The configuration of the domains becomes disordered at 3000 Å. Experimental results are summarized as follows: (1) films can be easily prepared from any material by cathode sputtering; (2) films of defined thicknesses can be obtained under well controlled production conditions; (3) a good uniformity of sputtering and a sufficient rapidity of film preparation are ensured; (4) films thus produced do not differ essentially from the initial material as to their composition. There are 2 figures and 7 non-Soviet-bloc references.

Card 3/4

Domain structure of ferromagnetic...

25791
S/048/61/025/005/005/024
E104/E201

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gos. universiteta im.
M. V. Lomonosova (Division of Physics, Moscow State
University imeni M. V. Lomonosova)

Card 4/4

S/048/61/025/012/007/022
B116/B138

AUTHORS: Spivak, G. V., Kirenskiy, L. V., Ivanov, R. D., and Sedov,
N. N.

TITLE: Development of mirror-type electron microscopy of magnetic
microfields

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25,
no. 12, 1961, 1465 - 1469

TEXT: The authors present electron-optical photomicrographs of domain
structures of various ferromagnetic materials and compare them with powder
patterns. The distribution of the local magnetic fields scattered by the
specimen is obtained from the contrast. G. V. Spivak, I. N. Prilezhayeva,
and V. K. Azovtsev (Dokl. AN SSSR, 105, 965 (1955)) were the first to re-
commend the electron mirror for photographing magnetic microfields. They
carried out their experiments at the laboratoriya elektronnoy optiki MGU
(Electron Optics Laboratory of MGU). The electron mirror has the following
advantages over the methods of secondary electron emission or photoeffect:
high field sensitivity (the illuminating electron beam is stopped by an

Card 1/A.

S/048/61/025/012/007/022
B116/B138

Development of mirror-type...

electric field in front of the specimen, i. e. "probing" of the spatial field structure; high contrast, due to the forwards and backwards motion of the electron; and the possibility of examining the magnetic structure at different distances from the source of the microfield. The optical system can be traversed by both slow and fast electrons. A 50-kv voltage focuses the reflected electrons and enhances the resolving power of the instrument. Domain structure electron-mirror pictures of a $\text{PbO}(\text{Fe}_2\text{O}_3)_6$ crystal magnification: 400, 800, and 1500, cobalt (400 and 800), and a cobalt film ($\sim 1000 \text{ \AA}$, 400 times), were in good agreement with ones produced by the powder method (400). The local magnetic fields were determined from the contrast. Calculations have shown that the contrast depends on the product Hz (z = extent of the H -field). The magnetic field decreases almost exponentially. Results are shown in Fig. 6. Finally it is noted that magnetic fields can be examined under an electron mirror microscope and that their strength can be measured at different distances from the specimen. The magnification here achieved (about 2000) can be further increased. There are 6 figures and 7 Soviet references.

Card 2/A₃

31608
S/048/61/025/012/022/022
B125/B112

9,2300 (1160, 1164, 1385)

AUTHORS: Ivanov, R. D., Spivak, G. V., and Kislova, G. K.

TITLE: The properties of ferromagnetic films produced by cathode sputtering

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1524-1525

TEXT: A method worked out by G. V. Spivak, I. G. Sirotenko, and R. D. Ivanov (Izv. AN SSSR. Ser. fiz., 25, 581 (1961) for the production of one-component and multicomponent ferromagnetic films of high quality by cathode sputtering was improved. The magnetization curves and the hysteresis loops of such films were studied and the most important loop parameters were determined by a magneto-optic method, suggested by G. S. Krinchik (Fizika tverdogo tela, 2, no. 8 (1960)) which uses the equatorial Kerr effect. Polarized light incident on the surface of the film through two windows in the discharge tube, was transmitted to a photoelectric cell by reflexion. In case of static operation, the hysteresis loop was recorded by means of a bridge circuit with two selenium photoelectric

Card 1/2

card 2/z University imeni M. V. Lomonosov)

SPIVAK, G.V.; KIRENSKIY, L.V.; IVANOV, R.D.; SEDOV, N.N.

Development of specular electron microscopy of magnetic
microfields. Izv. AN SSSR. Ser. fiz. 25 no.12:1465-1469
D '61. (MIRA 14:12)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova i Institut fiziki Sibirskogo otdeleniya
AN SSSR.

(Electron microscopy)
(Magnetic materials)

23734
S/057/61/03/006/018/019
B116/B201

9,4300 (1072, 1164, 1385) also 1145, 1160, 1171
AUTH: Spivak, G. V., Sirotenko, I. G., and Ivanov, R. D.

TITLE: Micromagnetic structure of films obtained by cathode sputtering

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 6, 1961, 754 - 756

TEXT: A description is given of the application of intense cathode sputtering for the purpose of obtaining different ferromagnetic films. Compared with existing methods, this one is shown to display a number of advantages. The domain structure and its changes have been observed on ferromagnetic cobalt films, molybdenum-permalloy films (79Ni 17Fe 4Mo), and silicon-iron films (3.3% Si) with the aid of powder patterns. The characteristics of the change of the domain structure with a change of thickness have been established on molybdenum-permalloy films. Ferromagnetic films are usually obtained by vacuum evaporation or by electrodeposition. Such methods, however, display a number of essential drawbacks: 1) The chemical composition of the film differs from that of the initial material; 2) difficulties arise in the preparation of homogeneous films of a desired

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S/057/61/031/006/018/019
B116/B201

Micromagnetic structure of films...

thickness. An attempt has been made by G. Siddall (Ref. 1; Proc. Inst. Electronics, 3, p. 34, 1958) and G. Wehner (Ref. 2; Adv. in Electronics and Electron Phys., 7, p. 279, 1955) to obtain films of different metals by cathode sputtering. A paper by L. Reimer (Ref. 3; Zs. f. Phys., 149, 425, 1957) describes attempts to prepare nickel films by cathode sputtering. These experiments, however, were conducted with relatively weak discharge currents and in a glow discharge; in addition, relatively high gas pressures (of 0.1 mm Hg and more) were applied. In such a case, a long time is needed to obtain films of a desired thickness, which, however, causes the film to be polluted and oxidized. The authors of the present paper have carried out an intense cathode sputtering in the plasma of a low-pressure discharge ($2 \cdot 10^{-2} \text{ to } 10^{-3}$ mm Hg). The mean free path was in this case larger than the distance between the bombarded target and the base on which the film was formed. The sputtered specimens were introduced into the plasma as the third electrode with a negative potential of the order of 1 kv with respect to the cathode. A hot cathode was used to raise the density of the discharge current. The discharge current was of the order of some amperes, and the current applied to the sputtered specimen was of the order of some

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23734

S/057/61/031/006/018/019
B116/B201

Micromagnetic structure of films...

milliamperes. The glass bases onto which the films were sputtered, were placed at a distance of 2 - 3 cm from the target. The setup used was so constructed as to allow several films to be submitted to sputtering simultaneously, without having to interrupt the sputtering process. The disk-shaped sputtered specimens had an area of 1 cm², which ensured a sufficient deposition of the sputtered material onto the base. The film thickness varied linearly with time. Therefore, the thickness could be easily regulated by changing the sputtering time; thus, films of any desired thickness were obtained. The film thickness was measured with an MII-5 (MII - 5) microinterferometer. The glass bases were heated up to 100 - 125°C. The films formed in a magnetic film of the order of 175 - 200 oersteds, which was parallel to the plane of the base. Quantitative chemical and spectroscopic analyses of films obtained by cathode sputtering and with different modes of operation showed that their composition did not differ from the initial components in the sputtered materials. The domain structure was observed on the films with the aid of powder patterns. When submitting molybdenum-permalloy films to sputtering, the specimen potential amounted to 800 v, the discharge current was 0.75 a, the density of the current to the specimen was 1.6 ma/cm, and the pressure was 9.10 mm Hg. The domain walls

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23734
S/057/61/031/006/018/019
B116/B201

Micromagnetic structure of films...

changed in appearance with an increase of the film thickness. The silicon-iron films, on which wedge-shaped powder patterns were established, were submitted to sputtering at a specimen potential of 700 v, a current density of 6 ma/cm^2 , a discharge current of 1 a, and a pressure of $8 \cdot 10^{-3} \text{ mm Hg}$. The method described here for obtaining ferromagnetic films by intense cathode sputtering is characterized by the following circumstances: 1) It is possible to obtain high-quality films of different thicknesses under easily controllable conditions; 2) cathode sputtering may be applied with materials of any melting temperatures; 3) uniform sputtering and pure films are ensured; 4) most important, the films obtained display only small deviations from the composition of the sputtered ferromagnetic substances. [Abstracter's note: Essentially complete translation.] There are 2 figures and 3 non-Soviet-bloc references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
Fizicheskiy fakul'tet (Moscow State University imeni M. V.
Lomonosov, Division of Physics)

SUBMITTED: September 16, 1960
Card 4/4

24.7700

521.5

S/048/62/026/011/003/021
B125/B102

AUTHORS: Sedov, N. N., Spivak, G. V., and Ivanov, R. D.

TITLE: Electron-optical study of a p-n junction in germanium and silicon

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 11, 1962, 1332-1338

TEXT: The authors describe an electron-microscopic method of examining a p-n junction with the help of ion-induced electron emission. This method offers the following advantages: (1) The surface of the specimen and the junction can be examined simultaneously; (2) the overall length of the junction is visible; (3) the image is not darkened by any auxiliary grid; (4) the method is likely to be suitable also for greater enlargements; (5) quantitative measurement of the potential distribution in the p-n junction is very simple. The secondary electrons are knocked out of the specimen by positive ions of 3-4 kev and then are accelerated and focused with the immersion objective of a high-quality emission microscope with improved metal mirror. Such secondary emission microscopes are

Card 1/3

S/048/62/026/011/003/021

B125/B102

Electron-optical study of a ...

particularly suitable for examining semiconductors with surface junctions that are not heated. The photographs are taken inside the vacuum chamber. The disturbances of the accelerating field that arise over the p-n junction bend the electron trajectories. The electrons deflected by these disturbances are kept away from the screen of the microscope by an aperture stop. When a voltage of 5-10 v is applied in the back direction, the image of the p-n junction assumes the shape of a dark band which need not be straight and which broadens as voltage increases. The range of the potential in the p-n junction can be determined from a comparison between the secondary emission image and the electron mirror. The construction of a mirror electron microscope was described by G. V. Spivak et al. (Izv. AN SSSR, Ser. fiz., 25, 683 (1961)). The shape of the potential barrier on the p-n junction was determined by using the sharp contrast between the reflected image of the surface and the boundary of the "spot" of secondary emission. The method described here permits measurements at sufficiently small intervals. Its accuracy is dependent upon the properties of the electron mirror which is more sensitive to inhomogeneities, such as p-n junctions, than is an electron microscope with ion-induced electron emission because the impurities change the work

Card 2/3

S/048/62/026/011/003/021
B125/B102

Electron-optical study of a ...

function. There are 10 figures.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gos. universiteta im.
M. V. Lomonosova (Physics Division of the Moscow State
University imeni M. V. Lomonosov)

Card 3/3

SPIVAK, G.V.; IVANOV, R.D.; PAVLYUCHENKO, O.P.; SEDOV, N.N.

Formation of contrast in mirror-type, emission, and scanning
electron-optical systems. Izv. AN SSSR. Ser. fiz. 27 no.9:
1139-1146 S '63. (MIRA 16:9)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta
im. Lomonosova.
(Electron microscope)

L 19956-63 EWT(l)/ENG(k)/EWP(q)/EWT(m)/EEC(s) 2/EWP(B)/EDS
AFFIC/ASD/ESD-5/IJP(C) P-4 AT/JD
ACCESSION NR: AF3007825

S/0048/63/027/009/1203/1206

AUTHOR: Spivak, G.V.; Ivanov, R.D.

TITLE: A mirror electron microscope and its use for quantitative investigation
of semiconductors /Report, Fourth All-Union Conference on Electron Microscopy held
in Sumy* 12-14 March 1963/

SOURCE: AN SSSR, Izv.Ser.fizicheskaya, v.27, no.9, 1963, 1203-1206

TOPIC TAGS: p-n junction, semiconductor, electron microscopy

ABSTRACT: The paper is a general report on investigations of the width of p-n junctions and the potential distribution across them by means of a mirror electron microscope. These investigations are part of comprehensive studies of p-n junctions on semiconductors by different techniques. The mirror microscope has been described elsewhere (G.V. Spivak and others, Izv. AN SSSR, Ser. fiz., 25, 683, 1961). For the present work there was built a special specimen holder with provision for applying a blocking voltage to the p-n junction, heating the specimen, and measuring the temperature by means of a thermocouple (see Enclosure) for ~~the~~ ^{one} of the purposes was to investigate the effect of temperature. The

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ACCESSION NR: AP3007825

junction in mirror microscopes is visualized by displacement of the boundary of secondary emission across the junction incident to variation of the potential applied to the semiconductor specimen. Actually the electric field emerging to the surface of the junction usually combines with the field due to a poorly conducting film that forms on the surface, so that the observed pattern is a superposition of the two fields, which are characterized by different dependences on the temperature of the specimen (hence the interest in heating the specimen). Six micrographs of germanium surfaces are reproduced, as well as a family of curves characterizing the variation of the junction width with applied voltage at 30, 60 and 120°C. Some of the microphotographs illustrate the results of heating. Orig.art.has: 6 figures

ASSOCIATION: Fizicheskiy fakultet Moskovskogo gos.universiteta im.M.V.Lomonosova
(Physics Department, Moscow State University)

SUBMITTED: 00

DATE ACQ: 07Oct63

ENCL: 01

SUB CODE: PH, SD

NO REF SOV: 006

OTHER: 000

Card 2/3

SPIVAK, G.V.; IVANOV, R.D.; PAVLYUCHENKO, O.P.; SEDOV, N.N.; SHVETS, V.F.

Visualization of a magnetic sound-recording field by means of
an electron mirror. Izv. AN SSSR. Ser. fiz. 27 no.9:1210-1218
S '63. (MIRA 16:9)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta
im. M.V.Lomonosova.
(Electron optics) (Magnetic fields)

SPIVAK, G. V.; FAVLYUCHENKO, O. F.; IVANOV, N. D.; NETISHENSKAYA, S. F.

"Die Struktur des Magnetfeldes innerhalb der Domanenwand, mit Hilfe des Spiegelelektronenmikroskopes sichtbar gemacht."

report submitted to 3rd European Regional Conf, Electron Microscopy, Prague,
26 Aug-3 Sep 64.

ACCESSION NR: AP4028456

S/0181/64/006/004/1223/1227

AUTHORS: Brokin, A. I.; Laptev, D. A.; Ivanov, R. D.

TITLE: Domain structure dynamics of thin ferrite films as a function of magnetic field and temperature

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1223-1227

TOPIC TAGS: ferrite film, ferrite domain structure, magnetic field dependence, temperature dependence, Kerr magnetooptical effect, cobalt ferrite, nickel ferrite, nickel zinc ferrite

ABSTRACT: The domain structure dynamics of thin ferrite films as a function of magnetic field and temperature was investigated, using the Kerr magnetooptical effect. The films were prepared by cathode sputtering of the ferrite onto a polished quartz backing which could be heated to 1000°C. The films obtained were of the order of 1000 Å thick. The behavior of cobalt ferrite film was similar to that of nickel-zinc ferrite, both having uniaxial anisotropy. After demagnetization with a variable field decreasing smoothly to zero, domain structure was

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ACCESSION NR: AP4028456

established in the samples, indicated by the observation of light and dark bands. With increasing magnetization the light domains decreased in size until the structure completely disappeared at 33 oerst for cobalt ferrite and 110 oerst for nickel-zinc ferrite. Domain structure did not reappear with a decrease of the magnetic field to zero. Light centers of reverse magnetization began to appear at -11.6 oerst and -63 oerst respectively. With increasing reverse magnetic field the light domains grew until the domain structure disappeared at -33 oerst and -110 oerst respectively. The behavior of nickel ferrite was considerably different. Regardless of the direction of the demagnetizing field, domains were always established perpendicular to that direction. With increasing magnetic field the contrast between light and dark domains decreased, but the domain size remained fixed. This is attributed to the fact that nickel ferrite is isotropic. Hence, reverse magnetization does not occur by the shift of domain boundaries but by the rotation of the magnetization vector. Centers of reverse magnetization appeared at -60 oerst, and the domain structure completely disappeared at -100 oerst. The temperature effect on cobalt ferrite was also studied. The field at which centers of reverse magnetization appeared decreased from $-11\frac{1}{2}$ oerst at 0C to -7 oerst at 200C and then increased to $-12\frac{1}{2}$ oerst at 400C. The field at which the domain structure disappeared decreased very gradually from -33 oerst at 0C to -31 oerst

Card 2/3

AUTHOR: Ivancev, F. D.

TITLE: On the possibility of measuring domain wall thicknesses in ferromagnetic materials with a reflection electron microscope

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.1, 1965, 145-147

TOPIC TAGS: ferromagnetic structure, domain structure, electron microscope, electron optics, result

ABSTRACT: The use of the reflection electron microscope to measure domain wall thicknesses in ferromagnetic materials is proposed and measurements on the prismatically cut surface of a single crystal of $\text{Fe}_{73} \text{Ni}_{27}$ are given. The electron beam passes through the prism, the surface of which is covered with a thin film of $\text{Fe}_{73} \text{Ni}_{27}$ (see Fig. 1). The prism is tilted so that the beam掠射 the surface at an angle of 15° . The test cathode electrode in the objective system is located at the same height as the prism surface. The image of the surface is formed in the electron gun. The image is then focused in the objective system. The beam passes through a system of deflector plates. The electrons passing through the aperture were 34% of deflector plates. The electrons passing through the aperture were 34%

Card 1/2

I. 2690-69

ACCESSION NR: AP5003249

When heated with a scintillator and the signal was displayed on an oscilloscope. When the crystal was heated to 250°C the domain wall thickness increased. This is due to the decrease in coercivity, since the magnetic anisotropy decreases with heating. Orig.art.has: 1 formula and 5 figures.

ASSOCIATION: none

Sub Code: SS, EM

SUBMITTED: 12Feb64

ENCL: 00

OTHER: 003

NR REF Sov:005

Card2/2

ACC NR: APG015766

(A, N)

SOURCE CODE: UR/0048/66/030/005/0784/0786

AUTHOR: Ivanov, R. D.; Abalmazova, M. G.

ORG: none

TITLE: A universal high-resolution electron mirror microscope (UZEM-60) Report,
Fifth All-Union Conference on Electron Microscopy held in Sumy 6-8 July 1965

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 784-786

TOPIC TAGS: electron microscope, electron optics, electron mirror, electron emission

ABSTRACT: A pilot model electron mirror microscope, constructed by modifying an EM-7 electron transmission microscope, is described very briefly. The instrument consists of an electron gun, a magnetic condensing lens with an iris and a magnetic stigmator, a fluorescent screen, an intermediate electromagnetic lens, and a five-electrode electrostatic objective similar to that of A. Septier (Compt. rend. Acad. sci., 235, 13 (1952)). The electrons, after passing in order through the above listed elements, are decelerated and reflected at the surface of the specimen and, after passing again through the objective and the intermediate lens, are brought to a focus on the fluorescent screen. The electrostatic objective has the form of a cone with a cutoff angle of 30°; this makes it possible to bombard the specimen with ions or illuminate it with ultraviolet light, thus considerably enhancing the versatility of the instru-

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ACC NR: AP6015766

ment. Particular attention was given to correction of astigmatism; there is a magnetic stigmator in the condensing lens and an electrostatic stigmator of the type described by O. Rang (Optik, 5, 518 (1949)) in the region of the objective lens. Accelerating voltages up to 60 kV are provided. Several photographs recorded with the instrument are presented. On one of these separate points can be distinguished that are separated by 700 Å, but this does not represent the ultimate resolution of the microscope. The instrument can be operated not only as an electron mirror microscope, but also as a thermoelectron, photoelectron, or secondary electron emission microscope. Orig. art has: 4 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 003/ OTH REF: 003

Card 2/2

IVANOV, R.D.

Measuring the width of the domain boundary of ferromagnets with
the aid of an electron-mirror microscope. Zhur. tekhn. fiz. 35
no.1:145-147 Ja '65. (MIRA 18:3)

AUTHOR: Ivanov, R. F.

SOV/30-59-2-10/60

TITLE: A Great Citizen of America (Velikiy grazhdanin Ameriki)
On the 150th Anniversary of Abraham Lincoln's Birthday
(K 150-letiyu so dnya rozhdeniya Avraama Linkol'na)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 2, pp 53-57 (USSR)

ABSTRACT: The author writes on Lincoln's life and work as a Member of Congress and President of the USA. He enjoyed the great sympathy of the American people and was hated and feared by the reactionary movement. He fought against slavery and abolished it. Many questions in connection with his life and work are dealt with in the papers by A. V. Yefimov, M. M. Mal'kin, A. I. Blinov, and T. P. Dement'yev (Ref 12). Lincoln is held in high esteem by the Soviet people as an outstanding representative of American democracy. There are 16 references, 9 of which are Soviet.

Card 1/1

OKOLOV, F.S.; NIKOLOV, S.Kh.; IVANOV, R.F.; KOPEYKIN, V.I.; PODDUNAYA, V.A.
(Krasnodar)

Effect of ultrasonic waves and the temperature on the colloidal
characteristics of the blood serum in man. Biul. eksp. biol. i
med. 55 no.2:53-55 F'63. (MIRA 16:6)

1. Iz kafedry obshchey gigiyeny (zav. - prof. F.S. Okolov) Ku-
banskogo meditsinskogo instituta.
(ULTRASONIC WAVES—PHYSIOLOGICAL EFFECT)
(HEAT—PHYSIOLOGICAL EFFECT)
(SERUM)

OKOLOV, F.S.; NIKOLOV, S.Kh.; IVANOV, R.F.; KOFZEYKIN, V.I.;
PODDUBNAYA, V.A.

Effect of ultrasonic waves on the colloidal properties of
the human blood serum. Nauch. trudy Kub. gos. med. inst. 19:
111-119 '62. (MIRA 17:8)

1. Iz kafedry obshchey gigiyeny (zaveduyushchiy - zasluzhennyy
deyatel' nauki Kirgizskoy SSR prof. F.S. Okolov) Kubanskogo
gosudarstvennogo meditsinskogo instituta.

IVANOV,R.G.

Activity " central plant laboratories and research teams in
petroleum refining plants. Biul.tekh.ekon.inform.Gos.nauch.-issl.
inst.nauch, i tekh.inform. 17 no.10:83-84. 0 '64. (MIRA 18:4)

755.5
.14

Standartizatsiya nafti i produktov ee pererabotki (Standardization of
petroleum and of the products of its conversion) Moskva, Standartgiz, 1947.

50 p.

At head of title: Russia. Vsesoyuznyy Komitet Standartov.

IVANOV, R.G., inzhener

We have to improve the quality of fuels used in high-speed
diesel engines. Standartizatsiia no. 6:46-49 N-D'54.
(MIRA 8:10)

1. Komitet standartov, mer i izmeritel'nykh priborov
(Diesel fuels--Grading)

IVANOV, R.G.

Achievements in the production of catalysts in the petroleum refining industry and prospects of its development. Biul. tekhn.-ekon.inform.Gos.nauch.-issl.inst.nauch. i tekhn.inform. no.3:9-13 '63. (MIRA 16:4)

(Catalysts) (Petroleum-Refining)

IVANOV, R.G.

Achievements in the production of aromatic hydrocarbons and
prospects of its development. Biul.tekh.-ekon.inform.Gos.nauch.-
issl.inst.nauch.i tekhn.inform. no.9:19-21 '63. (MIRA 16:10)

L 20982-65 EWT(m)/EPF(c)/T Pr-4 DJ/WE

ACCESSION NR: AP5003754

S/0065/64/000/009/0069/0070

AUTHOR: Ivanov, R. G.; Pezarov, A. M.

TITLE: All-Union conference on catalytic reforming and hydrogenation refining

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 9, 1964, 69-70

TOPIC TAGS: hydrogenation, petroleum refining, petroleum engineering conference, catalytic reforming

ABSTRACT: In 1958-1963 alone, the production of motor vehicle gasoline has risen by 50%, diesel fuel by 100%, lubricants by 50%, and lubricant additives by 280%. Radical improvement of motor fuel quality is a most important national-economic problem of the current seven-year plan. An All-Union conference, held 30 June-3 July 1964 in the city of Novokuybyshevsk examined experience in catalytic reforming and hydropurification. Two hundred fifty scientists participated in the conference. Yu. F. Sokov reported on bases in benzene during extraction from reforming catalysts; I. E. Gulyam's dealt with the problem of providing satisfactory catalysts for hydrogenation refining installations; G. I. Zavelev dealt with the problem of reactor shielding. V. M. Batalievskiy reported on the use of platinum as a catalyst in catalytic reforming in the German Democratic Republic. Experience in operating

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L 20982-65

ACQUISITION NR: AP5003754

catalytic reforming installations for gasoline refining has shown that when using fuel boiling at up to 150-160° C and containing not less than 0.04-0.05% sulfur, gasoline can be obtained with an octane number of 73 using the motor method.

ASSOCIATION: none

SUMMITTED: 00

ENCL: 00

SUB CODE: FP

NO REF SOV: 000

OTH IR: 000

JHRS:

IVANOV, R.G.

Introducing new processes in the production of aromatic hydrocarbons. Bial. tekh.-ekon. inform. Gos. nauch.-tekhn. inst. nauch.-tekhn. inform. 12 no. 5854-55 My '65. (MIRA 286)

KORLAS, I. I., inzh.; IVANOV, R. I.

RM-24 radio relay apparatus. Avtom., telem.i sviaz'
4 no.6:8-11 Je '60. (MIRA 13:?)

1. Otdel radiosvyazi Glavnogo upravleniya signalizatsii i svyazi Ministerstva putey soobshcheniya (for Korlas).
2. Nachal'nik radioreleynykh liniy Moskovskoy dorogi (for Ivanov).

(Railroads--Communication systems)
(Radio relay systems)

PHASE I BOOK EXPLOITATION 50A/2295

18(6)

Institut für Politikwissenschaften

Москве. Институт
Frimisseya kislojoda v staleplaviv nom proizvodstve (Inn of
Oxygen in Steelmaking) Moscow. Metallurgizdat. 1957. 416 p.
(Series Itei. Spornik, 37) Errata slip inserted. 3,500
copies printed.

Professor: This collection of articles is intended for scientific research: This collection of articles is intended for scientific industrial, chemical, and metallurgical engineers, physicists, and mathematicians.

Ranney, W.P. [Candidate of Economic Sciences], and V.A. Romashets

The author describes the open-hearth process with and without the use of oxygen.

or NO_2 . The author suggests a composition of O_2 and O_3 which, combined with oxygen blast, is supposedly more efficient in desuperheating.

Absorption of NO_2 . [Candidate of Technical Sciences, *Vesentini*.] The author discusses the use of oxygen blast for the intensification of the absorption of NO_2 in the melt bath for the intensification of fuel combustion, for the melting of the charge elements, and for the duration of the direct oxidation of charge elements, and for the duration of the reductive heat.

Abrosimov, Ye. V., V. A. Kudrin [Candidate of Technical Sciences. Docent].
Seslav, and G. I. Demin [Candidate of Technical Sciences].
Material and Heat Balances of the Open-hearth Scrap Process 195

With Oxygen Blast. Give an account of a comparative experimental investigation of heat and oxygen balances in work with and without oxygen blast.

214
Kudrin, V.A. *Temporary Overoxidation of the Open-hearth Bath
During Oxygen Blast*

Abrusimov, Ye. V., and V. A. Kudrin. Course of Carbon Oxidation in the Open-hearth Bath During Oxygen Blast

16/3

APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R000619120003-9"

Use of Oxygen in Steelmaking 507/295
 Kudrin, V.A., and Ye. V. Abrosimov. Possibility of Decreasing
 Time of the Rimming Process Proper in the Open-hearth Bath
 During Oxygen Blasting 252
 The author presents a method of decreasing rimming time to
 4 to 5 minutes, thus increasing production by 5 to 10
 percent.

Kryakovskiy, Yu. V. Dust Formation in the Open-hearth Furnace
 During the Scrap Process 260
 Aleksandrova, A.I. [Candidate of Technical Sciences], O.M.
 Oysa, and N.P. Bandy. Making Steel From High-phosphorus
 Pig Iron 281
 The authors discuss production data for the conversion of
 high-phosphorus pig iron, including heat losses, slag forma-
 tion, and the effect of oxygen on fuel consumption.

Glinkov, M.A. Doctor of Technical Sciences [Professor], and
 N.S. Vavilov [Candidate of Technical Sciences]. Heat Exchange
 Above the Bath of a Recirculation Steel-seating Furnace 305
 This article deals with the thermal and technical aspects
 of a 10-ton industrial recirculation steel-seating furnace
 with simultaneous fuel feed from both ends accompanied by
 the application of oxygen-enriched air.

Krivandin, V.A. [Candidate of Technical Sciences]. Study of
 Circulation in the Recirculation Steel-seating Furnace 330
 The author describes an investigation of the combustion
 processes, furnace gases, and composition of the exhaust
 gases.

Kotchman, A. M. [Candidate of Technical Sciences, Docent].
 Special Characteristics of Gas Flow in a Recirculation Steel-
 seating Furnace 354
 The author discusses investigations made in a model furn-
 ace for the study of gas flow, the distribution of combus-
 tion products, and the distribution of pressure on the walls.

Demin, G.I. [Docent]. Heat Balances of a Recirculation Steel-
 seating Furnace 372
 Molchanov, N.O. [Candidate of Technical Sciences, Docent]. Com-
 parison of Gaseous Fuel Combustion Processes in Furnaces With
 Circulation and Recirculating Gas Flow 377

Lazebnik, B.O. [Doctor of Technical Sciences, Professor].
 P.A. Shchitko [Candidate of Technical Sciences, Docent], and
 V.P. Zaytsev [Engineer]. Quality of Steel Made in a Recircu-
 lation Steel-seating Furnace 395
 The authors investigate the qualities of circulation
 furnace steels, comparing them with ordinary open-hearth
 steel.

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IV

Ivanov R.M.

ORLOV, V.I., kand.tekhn.nauk; IVANOV, R.M., inzh.; YERININ, Kh.D., inzh.

Gas content in open-hearth furnace baths. Sbor. Inst. stali
no.37:98-123 '57. (MIRA 11:3)

1.Kafedra metallurgii stali Moskovskogo instituta stali im. I.V.
Stalina.

(Open-hearth furnaces)
(Gases in metals)

IVANOV, B. M., inzh.; ABROSI'DOV, Ye. V., dots., kand.tekhn.nauk

Decarbonization reaction during the oxygen impingement process.
Izv. vys. ucheb. zav.; chern. met. no.7:17-27 J1 '58.
(MIRA 11:10)

1. Moskovskiy institut stali.
(Open-hearth process) (Oxygen--Industrial applications)

IVANOV, R.M. inzh.; ABROSIMOV, Ye.V., dots., kand.tekhn.nauk

Slag conditions during open-hearth smelting with various methods of
gaseous oxygen blow. Izv.vys.ucheb.zav.; chern.mot. no.11:9-21 N '58.
(MIRA 12:1)

1. Moskovskiy institut stali.
(Open-hearth process)
(Oxygen--Industrial applications)

IVANOV, R. M.: Master Tech Sci (diss) -- "Some problems of intensifying the scrap-ore open-hearth process with oxygen". Moscow, 1959. 18 pp (Min Higher Educ USSR, Moscow Order of Labor Red Banner Inst of Steel im I. V. Stalin), 120 copies (KL, No 11, 1959, 119)

IVANOV, K.N.

85-

PHASE I BOOK EXPLOITATION

SOV/5556

Moscow. Institut stali.

Novoye v teorii i praktike proizvodstva martenovskoy stali (New [Developments] in the Theory and Practice of Open-Hearth Steelmaking) Moscow, Metallurgizdat, 1961. 439 p. (Series: Trudy Mezhdunarodnogo nauchnogo soveshchaniya) 2,150 copies printed.

Sponsoring Agency: Ministerstvo vyshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy institut stali imeni I. V. Stalina.

Eds.: M. A. Glinkov, Professor, Doctor of Technical Sciences, V. V. Kondakov, Professor, Doctor of Technical Sciences, V. A. Kudrin, Docent, Candidate of Technical Sciences, G. N. Oyks, Professor, Doctor of Technical Sciences, and V. I. Yavovskiy, Professor, Doctor of Technical Sciences; Ed.: Ye. A. Borko; Ed. of Publishing House: N. D. Gromov; Tech. Ed.: A. I. Karusev.

PURPOSE: This collection of articles is intended for members of scientific institutions, faculty members of schools of higher education, engineers concerned with metallurgical processes and physical chemistry, and students specializing in these fields.

Card 1/4

New [Developments] in the Theory (Cont.)

SOV/5556

COVERAGE: The collection contains papers reviewing the development of open-hearth steelmaking theory and practice. The papers, written by staff members of schools of higher education, scientific research institutes, and main laboratories of metallurgical plants, were presented and discussed at the Scientific Conference of Schools of Higher Education. The following topics are considered: the kinetics and mechanism of carbon oxidation; the process of slag formation in open-hearth furnaces using in the charge either ore-lime briquettes or composite flux (the product of calcining the mixture of lime with bauxite); the behavior of hydrogen in the open-hearth bath; metal desulfurization processes; the control of the open-hearth thermal melting regime and its automation; heat-engineering problems in large-capacity furnaces; aerodynamic properties of fuel gases and their flow in the furnace combustion chamber; and the improvement of high-alloy steel quality through the utilization of vacuum and natural gases. The following persons took part in the discussion of the papers at the Conference: S.I. Filippov, V.A. Kudrin, M.A. Glinkov, B.P. Nam, V.I. Yavovskiy, G.N. Oyku and Ye. V. Chelishchev (Moscow Steel Institute); Ye. A. Kazachkov and A. S. Kharitonov (Zhdanov Metallurgical Institute); N.S. Mikhaylets (Institute of Chemical Metallurgy of the Siberian Branch of the Academy of Sciences USSR); A.I. Stroganov and D. Ya. Povolotskiy (Chelyabinsk Polytechnic Institute); P.V. Umrikhin (Ural Polytechnic Institute); I.I. Fomin (the Moscow "Serp i molot" Metallurgical Plant); V.A. Fuklev (Central Asian Polytechnic Institute).

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New [Developments] in the Theory (Cont.)

80V/5556

and M.I. Beylinov (Night School of the Dneprodzerzhinsk Metallurgical Institute).
References follow some of the articles. There are 268 references, mostly Soviet.

TABLE OF CONTENTS:

Foreword

5

Yavotskiy, V. I. [Moskovskiy institut stali - Moscow Steel Institute].
Principal Trends in the Development of Scientific Research in Steel
Manufacturing

7

Filippov, S. I. [Professor, Doctor of Technical Sciences, Moscow Steel
Institute]. Regularity Patterns of the Kinetics of Carbon Oxidation
in Metals With Low Carbon Content

15

[V. I. Antonenko participated in the experiments.]
Levin, S. L. [Professor, Doctor of Technical Sciences, Dnepropetrovskiy
metallurgicheskiy institut - Dnepropetrovsk Metallurgical Institute].

Card 3/14

New [Developments] in the Theory (Cont.)

SOV/5556

20

Kapustin, Ye. A. [Docent, Candidate of Technical Sciences, Zhdanov Metallurgical Institute]. Aerodynamic Properties of Fuel Gases and Their Flow in the Combustion Chamber of an Open-Hearth Furnace

271

Kudrin, V.A. [Docent, Candidate of Technical Sciences], G.N. Oyks, O.D. Petrenko, A.A. Yudson, Yu. M. Nechkin, B.P. Nuz, [Engineers], I.I. Ansheles [Docent, Candidate of Technical Sciences], R.M. Ivanov [Candidate of Technical Sciences], and V.P. Adrianova [Engineer]. Special Features of Making High-Quality Steel in Natural-Gas-Fired Open-Hearth Furnaces

280

Butakov, D.K. [Docent], L.M. Mal'nikov [Engineer], A.M. Lirman, V.D. Budenny, P.P. Babich, and A.I. Sinkovich [Ural Polytechnic Institute, Zavod im. Ordzhonikidze Chelyabinskogo sovmarkhoza - Plant imeni Ordzhonikidze of the Chelyabinsk Sovmarkhоз]. Special Features of Making Steel in Open-Hearth Furnaces With Magnesite-Chromite [Brick] Roofs

290

Kudrin, V.A., Yu. M. Nechkin, Ye. I. Tyurin [Candidate of Technical Sciences], and Ye. V. Abrosimov [Moscow Steel Institute]. The Acid Open-Hearth Process

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Card 10/14

New [Developments] in the Theory (Cont.)

SOV/5556

Perchatkin, P.N. [Engineer], A.A. Bezdevezhnykh [Docent, Candidate of Technical Sciences], A.M. Bigeyev [Docent, Candidate of Technical Sciences], and V.N. Letimin [Engineer], [Magnitogorsk Mining and Metallurgical Institute]. Effect of Furnace Atmosphere on the Behavior of Sulfur During Melting in the High-Capacity Open-Hearth Furnace

361

Ivanov, R.M. [Candidate of Technical Sciences], Ye. V. Abrosimov [Moscow Steel Institute]. Temperature Regime of the Oxygen-Blown Open-Hearth Bath

371

Samarin, A.M. [Corresponding Member of the Academy of Sciences USSR], and A.P. Potrusayev [Engineer], [Moscow Steel Institute]. Change in Metal Composition Caused by Oxygen Blowing

379

Fiklev, V.A. [Docent, Candidate of Technical Sciences, Sredneaziatskiy politekhnicheskiy institut - Central Asia Polytechnic Institute]. Desiliconizing Pig Iron by Oxygen in a Special Spout While Pouring Iron Into the Open-Hearth Furnace

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Card 13/14

TAKHTAYEV, Yu.B.; IVANOV, R.M.; LEONOV, A.F.; VARNAVSKIY, I.N.;
IZOTOV, N.I.; MUSIKHINA, M.K.

Improved technology for the making of native alloy steel
at the Orsk-Khalilovo Metallurgical Combine. [Sbom. trud.]
Nauch.-issl.inst.met. no.4:82-90 '61. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut metallurgii (for
Takhtayev, Ivanov). 2. Orsko-Khalilovskiy metallurgicheskiy
kombinat (for Leonov, Varnavskiy, Izotov, Musikhina).
(Khalilovo--Steel--Metallurgy)

TAKHTAYEV, Yu.B.; IVANOV, R.M.; LEONOV, A.F.; VARNAVSKIY, I.N.;
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Improved technology for the making of native alloy
steel at the Orsk-Khalilovo Metallurgical Combine.
[Sbor. trud.] Nauch.-issl.inst.mst. no.4:82-90 '61.
(MIRA 15:11)

1. Nauchno-issledovatel'skiy institut metallurgii (for
Takhtayev, Ivanov). 2. Orsko-Khalilovskiy metallurgicheskiy
kombinat (for Leonov, Varnavskiy, Izotov, Musikhina).
(Khalilovo—Steel—Metallurgy)

LEONOV, A.F.; MOROZOV, A.N.; IVANOV, R.M.; VARNAVSKIY, I.N.;
TAKHTAYEV, Yu.B.; IZOTOV, N.P.; VOLKOV, S.S.

Smelting of native-alloy steel. Metallurg 6 no.10:20-21
0 '61. (MIRA 14:9)

1. Orsko-Khalilovskiy metallurgicheskiy kombinat i
Chelyabinskiy nauchno-issledovatel'skiy institut metallurgi.
(Steel alloys—Metallurgy)

8/133/61/000/006/004/017
A054/A129

AUTHOR: Ivanov, R. M.

TITLE: News in brief

PERIODICAL: Stal', no. 6, 1961, 518

TEXT: The Chelyabinsk nauchno-issledovatel'skiy institut metallurgii (Chelyabinsk Scientific Research Institute of Metallurgy) in cooperation with the OKhMK has developed a method of converting converter semi-products with a 0.45 - 0.65% P and 0.20 - 0.40% C content (not containing Si and Mn) in open-hearth furnaces to 10ХСНД (10KhSND), 15ХСНД (15KhSND), 14ГН (14GN) and other steels. The application of the duplex method for natural-alloyed pig-iron showed that addition of about 1.5% cinder to the slag during smelting improved the dephosphorization of the metal. The metal was deoxidized in the furnace only with 5 kg/t ferromanganese and in the ladle with silicomanganese, ferrosilicon, ferrotitanium and aluminum. The phosphorus content of the finished metal decreased by 0.003-0.006 %, the deoxidizing period was 4-5 minutes shorter and the cost of steel 34 kopek/ton lower. The application of very strict parameters for the smelting process improved the surface of 2.7 - 3.0 ton strip ingots. ✓

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News in brief

S/133/61/000/006/004/017
A054/A129

This new technology makes it possible to melt 20XГНР (20KhGNR) steels (with a 0.91 - 0.92% Ni content) based on natural-alloyed pig-iron without adding nickel or nickel-compounds, and to roll 6.2-ton ingots of this steel into sections with diameters of up to 150 mm.

✓

Card 2/2

IVANOV, R.N.; KAMINSKIY, S.T.

Role of Stokes' current in Leningrad floods. Izv. AN SSSR. Fiz.
atm. i okeana 1 no.11:1196-1204 N '65. (MIRA 18:12)

1. Morskoy gidrofizicheskiy institut AN SSSR, Chernomorskoye
otdeleniye. Submitted April 16, 1965.

20718

18.7530 1145

S/120/61/000/001/061/062
E032/E114

AUTHORS: Kukavadze, G.M., Ivanov, R.N., and Zhuravleva, V.G.

TITLE: Production of Films of High Melting Point Materials
in Vacuum

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.1, p 195⁶

TEXT: One of the methods of producing thin films of high melting point materials is by condensing the vapours of these materials, produced by electron bombardment of solid specimens in vacuum. The present authors have used one of the possible versions of this method to obtain pure deposits of cobalt, iridium and rhodium. The principle of the method is illustrated in Fig.1. The metal to be evaporated 1, which is in the form of a rod in the case of cobalt, a wire in the case of iridium and a strip in the case of rhodium, is inserted into the ceramic holder 3 and is heated by the tungsten spiral 2. A voltage of +2.5-3 kV is applied to the specimen 1 through the lead 4. The spiral is earthed and carries a current of 4 to 4.5 A. The spiral consists of 2.5 turns and is made of a wire 0.2 mm in diameter. The emission current from the spiral is 15-20 mA and the electrons from Card 1/3

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S/120/61/000/001/061/062
E032/E114

Production of Films of High Melting Point Materials in Vacuum
the spiral bombard the metal, raising it to a high temperature.
In the case of cobalt, a drop of the metal is kept by surface
tension forces at the end of the ceramic tube. The cobalt does
not interact with the ceramic and the evaporation occurs from the
surface of the drop. In the case of evaporation of iridium and
rhodium the end of the wire or strip melts, and the resulting
liquid drop serves as the source of vapour. The method has been
used to produce pure cobalt films 0.15-0.4 μ thick, having well-
defined magnetic properties when deposited on glass slides
140 x 110 x 30 mm³. Iridium and rhodium deposits about 0.1 μ thick
have also been obtained on mass-spectrometer ion-source elements.
There are 1 figure and 3 Soviet references.

X

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki
AN SSSR
Card 2/3 (Institute of Theoretical and Experimental Physics,
AS USSR)

SUBMITTED: December 29, 1959

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Production of Films of High ...

S/120/61/000/001/061/062
E052/E114

Fig.1

Card 5/3

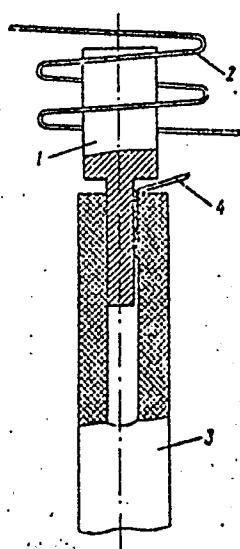


Fig. 1
S
1

Ivanov, R. N.

INSTRUMENTATION: SPECTROMETERS

"Double-Filament Ion Source With Surface Ionization for Mass Spectrometers", by R.N. Ivanov and G.M. Kukavadze, Pribory i Tekhnika Eksperimenta, No 1, January-February 1957, pp 106-110.

Description of an ion source for a mass spectrometer. The source is intended for the analysis of substances in the solid state and is based on the phenomenon of surface ionization. Unlike the widely-used thermionic sources, in which one evaporates from a single emitter simultaneously both neutral atoms and the positive ions resulting from the surface ionization, the atoms are evaporated in this source from a single filament, and the ionization takes place on a second filament. Such a separation of the evaporation processes and from the surface ionization makes it possible to increase considerably the effectiveness of the ionization in the ion source.

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